

ESSAY

ON

THE EFFECTS OF IODINE,

ETC. ETC.

1487

THE HISTORY OF THE

REIGN OF

CHARLES

THE FIRST

OF GREAT BRITAIN

LONDON :

PRINTED BY JAMES MOYES, GREVILLE STREET.

1794

1794

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1794

**ESSAY**  
ON  
**THE EFFECTS OF IODINE**  
ON  
**THE HUMAN CONSTITUTION ;**  
WITH  
**PRACTICAL OBSERVATIONS**  
ON ITS USE IN THE CURE OF  
**BRONCHOCELE, SCROPHULA, AND THE TUBERCULOUS**  
**DISEASES OF THE CHEST AND ABDOMEN.**

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**BY W. GAIRDNER, M. D.**

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**LONDON :**  
**PRINTED FOR THOMAS AND GEORGE UNDERWOOD,**  
**32, FLEET STREET.**

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**1824.**



## INTRODUCTION.

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THE medicine which forms the subject of the following treatise has been so lately introduced into practice, that few Physicians are acquainted either with its properties, or with the manner of using it. Almost all have heard of its effects in discussing bronchocele; and some, rashly presuming that it cannot be a drug of great power, have prescribed it without giving themselves the trouble of making any inquiry into the manner of employing it, or the dangers to which its use is liable. I have thus seen more than one Physician seriously injured in his reputation; and I have seen many patients irrecoverably injured in their health by this subtle and powerful medicine.

Not long since I was informed by a Physician, of great and deserved eminence, in London, that he had prescribed it to the extent of ten grains at one dose to a young woman. Most fortunately she was saved by vomiting. About a year ago, I was consulted on account of a young lady in the last stage of tubercular pulmonary consumption. She was attended by a Surgeon, who had bled her to a most unaccountable degree. This gentleman proposed to me the use of digitalis, which being objected to, he then proposed successively the use of hemlock and iodine. It was plain that he was about as well acquainted with the virtues of one medicine as with those of the other, and not better versed in the history of the disease he was treating. When a medicine of so much power is thus in the hands of every person, I trust I shall not stand in need of apology for having made public the following little treatise. Its materials have been for some time in my possession; and I was desirous of.

delaying yet a little the publication of them ; but certain statements have gone forth to the world, of the great benefits to be derived from the use of iodine, while the history of its dangers has been most unaccountably withheld. It is in order to fill up this hiatus, and at the same time to direct particularly the attention of Practitioners to the proper manner of using it, with a view to its good effects, that this essay is written:

Particular circumstances have afforded me opportunities of seeing this medicine extensively used ; and at the same time of witnessing the bad effects which resulted from the prodigal manner in which it was first employed. I have also made inquiries respecting its history in countries which I have not visited. The answers I have received have not been so detailed and satisfactory as I could have wished : they have all, however, more or less confirmed the observations I have made myself,

or which have been communicated to me from different parts of Switzerland and France.

Some persons may, perhaps, desire to see a daily report of the different cases to which allusion is made in the following pages ; but this would not have been consistent with my plan, which is rather at the present time to present an essay than a treatise to the public.

Bolton Street, Piccadilly, 4th Dec. 1823.



## ESSAY

ON THE

## EFFECTS OF IODINE.

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THE discovery of specific remedies has always, and most justly, been considered one of the most important benefits to be conferred on the practice of medicine. Much dispute has been carried on respecting their nature, but all are agreed about their existence. They have been defined by Dr. Young to be medicines which cure diseases, “without any perceptible connexion between the immediate effect and the benefit obtained.” While their operation is thus obscure, the mode of their employment, and their peculiar virtues, must be subjects of much doubt and uncertainty; while the accidents to which they are liable, in common with other medicines, must occasion great embarrassment and perplexity. But from the moment their *modus operandi*

can be connected with any known general law of the constitution, a great part of these doubts disappear, a light is afforded for directing their good effects, and a clew is obtained for tracing their injurious properties, and applying the necessary antidote. The medical history of iodine will fully exemplify the above observations.

This medicine was first introduced into practice by Dr. Coindet of Geneva. Whilst making researches for other purposes, he found that the *fucus vesiculosus* had been recommended by Russel in the cure of goitre. From this plant, and other species of the same family, the soda, with which iodine is generally found combined, is extracted. As the sponge, whose virtues have long been established by certain experience at Geneva,\* is also a maritime plant,

\* The total inefficacy of this medicine in the hands of British Practitioners, while its virtues are so palpable and evident at Geneva, that not only Physicians, but also the inhabitants in general, are convinced of their reality, had always surprised me. I was at a loss to account for testimony so contradictory. It seemed as if medicine were a science so uncertain and futile, that its plainest

Dr. Coindet suspected that iodine might be the active principle of them both; and by this analogy he was first led to employ it in the cure of bronchocele. The success which attended its use in the first instance was very remarkable; and it seems to have been exhibited cautiously and warily, for some considerable time had elapsed before the alarm was given of its noxious effects.

facts depend more on the authority of name than on the substantial evidence of observation and experiment. I lately obtained an explanation of this difficulty from a quarter in which I can place implicit reliance. It seems that the chemists are much in the habit of substituting charcoal for burnt sponge, of which an undeniable proof is the fact, that burnt sponge is sold at an inferior rate to the same article before it has undergone the process of combustion. — I may also be allowed to state in this place, that I have sent prescriptions for the hydriodate of potass to several chemists in London—that my prescriptions were said to have been made up; but that a few days afterwards, when I called at their shops, in order to examine the medicine, I discovered that they were not even aware of the existence of such a drug. If such frauds continue to be committed with impunity, the sick had better submit patiently to their pains, than have recourse to physicians, whose science is rendered unavailing for the profit of tradesmen.

It may easily be imagined, with what joy the discovery of a certain remedy for bronchocele was received in a place where that disease is extremely common. Many used it, and many were delivered from their unseemly and most inconvenient malady. But this state of things was not of long duration. Familiarity with the remedy begat too great liberality in its use, the effects of which were speedily apparent.

Iodine was then looked upon as a specific remedy for goitre. Its effect upon the system was little known and little attended to. No person seems even to have considered how it produced its astonishing results. Its efficacy, however, in the cure of goitre, was soon generally recognised. Its reputation flew over the city and neighbourhood of Geneva, and it was taken with the utmost levity, with and without medical advice. Dr. Coindet justly deplores this abuse, which was the cause of the unmerited discredit into which the remedy afterwards fell. When it had been used for some time in this manner, its pernicious effects began to show themselves ; several persons paid for



their temerity with their lives, and many were irreparably injured in their health. Every day brought to light some new catastrophe, the effect of iodine; and in the course of a short time its name was associated with the idea of a most intractable and virulent poison. Neither patient nor physician dared venture on its employment. It seemed to be one of those benefits held up to invite the appetite, while its use was denied us.

These melancholy consequences of its indiscriminate and lavish employment, show that iodine is a medicine of great power, and teach the necessity of watching and studying its operation. Nothing can assist us more in forming an accurate estimate of its virtues than a careful observation of the bad effects which flow from its abuse; and we shall now, therefore, proceed to consider them in detail.

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SOME time after the introduction of iodine into practice, a few cases of severe spasm-

dic affection of the stomach and bowels occurred. They were attended with violent and incessant vomiting, excruciating pain of stomach and bowels, strong spasms of the back and legs. The tongue was commonly furred, and the bowels sometimes violently purged, at other times obstinately constipated. The pulse was generally extremely frequent, small and depressed—the eyes sunk and hollow—the countenance ghastly and pale. These accidents were usually imputed by the patients to the iodine they had taken. The Physicians by whose advice the medicine had been given, would not allow this origin of the disease, till a repetition of similar cases determined that the sufferers were right. The vomiting, pain of the bowels, and the cramps of the legs, are extremely severe. They are also with the greatest difficulty allayed, continuing sometimes for many days, and renewed during weeks, and even months, after taking food. The legs sometimes swell in the first instance, and afterwards become rapidly thin and meagre. There is another symptom, which, though common

to almost all diseases, is peculiarly the sign of this. The emaciation which attends this irregular action of iodine is so rapid and so extreme as to strike terror into the minds both of patients and physician. A magistrate of Geneva, high in office, robust, corpulent, and of an athletic form, was so much reduced in flesh, that he was not known by his oldest acquaintances. I have seen emaciation, in one case, proceed to such an extent in a short time as is almost incredible. A young English lady, at a boarding-school, at Paris, had for some time been afflicted with goitre. Her brother was prosecuting the study of medicine there. With the characteristic zeal of a young man, as soon as he heard of the wonderful effects of iodine, he determined on making trial of its powers on his sister. He did not find much difficulty in persuading her to become the subject of his experiments, nor did he encounter more difficulty on the part of the French gouvernante to whose care she was confided. The remedy succeeded, as usual, in greatly diminishing the tumour ; and for some time

no bad effects were apparent. A small hard knot only remained in the situation which had been occupied by a considerable swelling before; and the desire to get rid of this little tumour was the cause of the remedy having been pushed too far. Its deleterious effects first showed themselves by gnawing pain at the upper part of the stomach, great anxiety, and oppression. These symptoms were disregarded, and the remedy was persevered in for a week longer, during which time the patient became very much emaciated; she was frequently affected with vomiting, the pain of the abdomen became more frequent and more severe, and the thirst was very distressing. I was sent for early in the morning, in consequence of an alarming diarrhœa, which had come on during the night, and I found her in a deplorable condition indeed. Her brother, and the mistress of the boarding-school, were so alarmed at the consequences of their conduct, that they were quite unfit to give any advice about her treatment; they could hardly indeed give me a coherent account of what had passed;



and the poor young lady was therefore entrusted to the care of servants. She was then suffering the most excruciating pain at stomach, violent cramps, and convulsive action of the muscles of the arms, back, and legs, from which she had scarcely any intermission. The vomiting and purging were almost incessant. The dejections were bloody, slimy, and very scanty, but at first had been copious and feculent. The matter vomited was of a dark green colour, streaked with blood. The tongue was loaded with a thick crust, resembling in colour the matter vomited. The countenance was pale, contracted, and with that peculiar expression which announces abdominal suffering. The pulse was small, hard, and frequent, scarcely indeed to be numbered. The whole appearance of the patient was such as to excite well-grounded fears for her life. Being quite unable to swallow, four grains of opium were directed to be thrown into the rectum. They were not, however, long retained, and were not productive of benefit. An anodyne embrocation was therefore applied to the

pit of the stomach, fomentations to the feet ; and, as soon as it could be got ready, she was placed in a warm bath. This so much quieted the irritation of the stomach, that she was enabled to swallow about thirty drops of laudanum, from which there was a decided alleviation of her sufferings for nearly an hour. During ten days she remained in a very doubtful state, subject to frequent severe attacks of diarrhœa, with intense pain of the bowels. Her emaciation during this time was most extraordinary. The expression of her French nurse, “ *dé-charnée*,” was literally applicable to her ; her arms and body were almost fleshless — her breasts, which had been large, were now perfectly flat — the calves of her legs had quite disappeared — and her thighs were not much thicker than her wrists, when in health. I never witnessed any thing like such extenuation in so short a space of time. By the steady and very liberal use of opium, she recovered to a certain degree ; but when I last saw her, many months after her illness, she remained subject to frequent violent spasms of the stomach,

during which opium alone gave her relief. Her nervous system had been much shattered. She repeatedly declared to me that she seldom enjoyed an hour's respite from the most wretched depression of spirits, and since her illness had never felt any thing like her former buoyancy of mind. The few moments of ease she knew were purchased by large doses of laudanum, to the habitual use of which her sufferings had forced her. She was still very pale, and her emaciation, though much less, was yet very great. She was indeed a miserable monument of the effect of iodine. I heard of this young lady a few weeks ago ; she was then much better, had in a great degree recovered her looks, and was able to leave off the use of opium almost entirely. Her stomach, however, still remained very weak, and obliged her to be very careful of her diet. The bronchocele had not returned ; but the small hard swelling mentioned above remained still very sensible to the touch, but not evident to the eye.

These are the outlines of a very severe

case. I trust that such a one is not likely to occur soon again. But if practice so daring as I have more than once witnessed in London be repeated, we may very soon see even worse accidents than the above. These statements, however, are important, inasmuch as they demonstrate that iodine is not merely a medicine of specific power against bronchocele, but that it dissipates this disease, by virtue of its very important action on the whole absorbent system. I shall take further notice of this property in a future part of my paper.

There is an effect of iodine to which I have alluded in the case just quoted, but which is so extremely common, when the remedy has been pushed to an overdose, that it deserves to be noticed at greater length. The anxiety and depression of spirits are so great and persevering as to warrant my considering them as the peculiar effect of iodine, and not the consequence of the great debility which attends the violent and inordinate action of this medicine on the constitution. It is an affection very different from hypochondriacal melancholy,



inasmuch as it dwells principally on the present and has no reference to the future. Patients have generally described it to me as a sense of sinking and faintness, which were peculiarly oppressive, and I have heard them complain of it while suffering the most intense pain, as the part of the complaint which was yet the most difficult to bear. This symptom is an almost constant attendant on the violent action of iodine on the system, and frequently makes its appearance in a lesser degree when the medicine acts in a kind and salutary manner.

We have now to notice the effect of iodine on the nervous and muscular systems, and this is by far the most interesting part of our paper. It is that also on which the greatest degree of doubt and uncertainty rests.

The nervous and muscular systems are peculiarly exposed to the irregular action of this medicine. In certain persons, indeed, of peculiar habits of body, it cannot be exhibited so as to affect the constitution in any manner, without in some shape or other producing unpleasant nervous symptoms,

such as dimness of vision, indistinct hearing, fallacious touch, insomnia, breathlessness, palpitation, and all the countless forms of inward nervous derangement. But the symptom to which we shall more peculiarly confine our attention, is a degree of tremor which generally comes on when the patient is under the full constitutional influence of iodine. This symptom may be reckoned a good gauge of the degree of nervous excitement which has taken place, and it is seldom or never absent when that excitement has proceeded to any considerable degree. It generally begins by a slight trembling of the hands, resembling that which takes place from the poison of lead ; and if the medicine be incautiously continued, the larger muscles of the arms, legs, and back become affected. When in this state, the patient can with difficulty walk, and his progression is a tottering uncertain motion. He cannot carry any thing straight to his mouth, but the hand moves in a zig-zag manner, and with difficulty arrives at the mouth at last. This complaint is generally attended with a hurried circulation, and a small thready

pulse. There is commonly great suffering at stomach and confined bowels.\* When nervous affection first appears the medicine must be most diligently watched, and if the symptoms seem to increase, its use should be instantly put a stop to. If rashly persevered in, the symptoms I have described above will certainly be excited, and then it is vain to withdraw the medicine; the complaint goes on progressive for weeks and months, even though its exciting cause be abstracted; and when it does at last begin to diminish, the amendment is so slow and gradual that the patient is scarcely conscious of the relief he receives. I saw two cases of this kind with Dr. Peschier of Geneva, in which the patients had suffered more than twelve months, and yet their sufferings had undergone little mitigation. It is of some importance not to provoke a complaint with so much difficulty allayed; and no one who has not seen it can have an idea of the slow and

12 \* I have seen in one case a most obstinate suppression of urine. I merely mention the fact, as I have no reason to believe it to be a common effect of the use of iodine.



imperceptible degrees by which it steals on the patient. Its first advances generally escape his observation as well as that of his physician. A slight trembling of the fingers, quivering of the eye-lids, occasional subsultus of the tendons of the fingers, arms, and legs, are generally the first symptoms observed, and it behoves us to be constantly on the watch for them. I have always obliged my patients to raise an empty glass or any light object to the head. By this means the smallest degree of unsteadiness in the hand will commonly be detected. I recommend a light object to be used for this purpose, because a heavy one tends to give steadiness to the muscles and to disguise the complaint.

This effect of iodine is frequently complicated with the choleric complaint I have already described; but it is evident that their proximate cause is different, since they also exist separately. The nervous affection is most common, if I may trust my observations, in the mobile constitutions of women; at least nine out of ten cases, which I have seen, were in women, and by far the greater



number in young nubile girls. In the latter cases the disease generally excites some hysterical symptoms.

This affection differs from chorea. The patient has no difficulty in keeping the affected limbs steady, if not called upon to exert them, and in general exertion is irksome and painful. Like chorea, however, it is always attended with a constipated condition of bowels. The evacuations, also, are uniformly hard, scybulous, and dark coloured. There is certainly a considerable resemblance between the two diseases, but it would be too much to assert that what has been called their proximate cause, or their nature, is the same. Such an idea, however, has been adopted by more than one physician who has seen these cases along with myself. I mention this, not in order to give weight to the opinion, but in order to give my readers a more distinct notion of the form, which the affection we have been considering sometimes assumes. A statement of this kind is more graphical than many descriptions.

Mr. Orfila, whose industry and ingenuity in the study of poisons are well known, has not neglected to examine and note the effects of iodine when given in a large dose. He gave it to different animals in the quantity of a dram and two drams. They were in general seized with violent and frequent vomiting. When the contents of the stomach were not soon thrown off, or were altogether retained, the poison was much more speedily fatal. The animals do not seem to have been affected with any other very remarkable symptom. It is stated that they were much dejected, and manifested suffering, though they did not howl, were not paralyzed or convulsed, and were not affected with any of the more violent symptoms by which poisons commonly show their action on the living body. It is plain that much light is not thus thrown on the effects of iodine when exhibited as a remedy; yet when considered along with the appearances after death, we still find a certain analogy. The stomach was generally found corroded by small ulcers of a linear form, which had eaten through the mucous coat.

Those parts, also, which were most exposed to the action of the poison, were thinner and more transparent than the others, and were easily torn asunder. The mucous membrane in the neighbourhood of the pylorus was found much inflamed, swelled, and covered with a crust of coagulated lymph.

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THE affection of the alimentary canal which we have described above, is plainly to be ascribed to the acrid operation of iodine on its mucous membrane. I have never witnessed it in any considerable degree when this medicine had not been taken internally. But I have seen slight pains of stomach, accompanied with copious bilious evacuations, attend its external use. These never proceed to the degree of violence which marks the internal exhibition. Indeed, it is rare to see them in any considerable degree disturb the comfort of the patient. It is not thus when taken into the stomach. The case of the young lady related above, sufficiently shows its

deleterious influence. I have never seen any disease of the bowels which more closely resembled the terrific descriptions given by the physicians of India, of the sufferings from the cholera of that country. Yet no medicine varies more in its effects than this. Some persons take it in large doses for a great length of time with perfect impunity; while others, from that peculiar, undescribed and unintelligible state of constitution, called by physicians an idiosyncrasy, are speedily and violently affected by very small doses. Mr. Magendie, whose accuracy is well known, states that he had swallowed a spoonful of the tincture, containing about a scruple of iodine, without any bad effect ensuing. A child, also, four years old, swallowed by mistake a tea-spoonful of the same preparation with equal impunity. These are extraordinary instances, for I have received the account of the death of a fine boy ten years old, who did not survive many hours after having swallowed the largest of the above doses. And a strong man who took this medicine, under my own care, in doses of half grains three times a-day for



one week only, was very soon affected in such a manner, that, had the medicine not been immediately interrupted, the most lamentable consequences might have ensued. When this medicine is given internally, and it is often necessary that it should be thus exhibited, it must be used with extreme caution, under the sanction and observation of those who are able to watch its effects, and who are experienced in its virtues.

I have never seen a case in which the mismanagement of iodine proved fatal, and cannot, therefore, say whether its long continued use ulcerates the mucous membrane of the stomach in the human body, after the manner described by Orfila. I have no reason to believe that it does, unless the extreme violence of the symptoms, and the obstinacy of the vomiting, should by some be reckoned proofs of such a state. I certainly, however, am inclined to believe that the last mentioned symptom proceeds from inflammation and occlusion of the pylorus, which Orfila describes as the effect of poisoning by iodine.

It is a much more difficult task to dis-

cover a probable explanation of the manner in which iodine disturbs the actions of the nervous system. The rationale of diseases, even when we are best acquainted with their history, is obscure and unsatisfactory. Here it is better at once to stop short, and confess our ignorance, than, by adventurous speculation and daring theory, lay a foundation for mistakes in practice. This subject certainly presents a fine field for hypothesis, and a tempting one to a theorist. But we leave our readers in possession of the facts, and trust they will not use them with less caution than ourselves. One thing only seems probable, that is by its operation on the brain, either immediately, or through the agency of the nerves, that the effects we are considering are produced. The similarity of this effect of iodine to the mercurial erethismus, so well described by Mr. Pearson, will be evident to all, and is an analogy deserving of attention and study. I have seen many instances of gilders in Paris and Geneva affected with mercurial erethismus, closely resembling the erethismus from the use of iodine.

Our most important consideration is the cure of these painful affections. In the choleric disease the first remedy of all, and that without which we can have little hope of subduing the disease, is opium. If called early to the patient, before the bowels have yet thrown off their acrid contents, I have generally waited a little before exhibiting opium. I have done this for two reasons: First, that I might be certain of all acrid matters having been removed from the alimentary canal before the prescription of a medicine to quiet its irritation; and, secondly, because it is with great difficulty that the opium is retained while the extreme irritation of the disease is going forward. Emollient and diluting injections will in these cases be found most useful auxiliaries, both by washing out the inferior portion of the gut, and by quieting the violent action of the stomach. Hemlock and hyoscyamus sometimes succeed when opium fails. The case related at page 7 was much relieved, indeed I may say that the young lady's life was saved, by

a quarter of a grain of acetate of morphia given every half-hour. Every other form of opium was tried without effect; they were not even retained an instant on the stomach. The acetate of morphia alone could be taken, and it effectually restrained the disease, which must otherwise have very soon terminated the life of the patient. This medicine has not, however, answered my expectation in other cases. I have tried various bitter and astringent medicines in union with opium, but have found them uniformly injurious during the first stage of excitement and exacerbation. Afterwards, when the disease has in some degree abated, this class of medicine will be found useful. I cannot too strongly caution my readers against the use of purgatives in such cases. However gentle they may be, their effect is uniformly and most decidedly noxious. In the first and acute period of this affection of the alimentary canal, it is almost impossible to quiet the disturbance which a purgative occasions. A remedy which ought never to be neglected is the warm bath. It will be found a most powerful coadjutor in restrain-



ing the violence of the spasms, and in moderating the perturbed action of the stomach.

But the greatest difficulty will be found in treating the second or chronic stage of the complaint, when the symptoms we have mentioned as characterising it are prolonged in a mitigated form. I am inclined to believe, that in this state there is actual ulceration of the mucous membrane of the intestines. I have only seen one case of this kind, of which I have given the history above. But several similar instances have been communicated to me, and they must be of frequent occurrence wherever iodine is used ignorantly and rashly. In all those cases of chronic affection of the alimentary canal, with the particular history of which I have been able to become acquainted, the symptoms differed widely from those which marked the accession of the disease. Instead of the small vacillating pulse of the first period of the complaint, it was bounding and firm, the extremities were no longer cold, nor the system collapsed; the diarrhoea had assumed a dysenteric form, the fæces being retained, and the dejections

consisting chiefly of matured mucus or pus. In such cases, I believe, the conjoined operation of aperient medicines and opium will be found most advantageous in quieting the symptoms. By this plan at least I succeeded best in relieving the single case that has yet occurred to me.

With regard to the treatment of the muscular spasms, and the disturbance of the nervous system, we have before described, there is no invariable plan of cure to be followed. Until we are better acquainted with the nature of the affection, it is impossible to apply a remedy to the root of the complaint. All I can do here, therefore, is to point out the means by which I have best succeeded in averting and palliating its painful symptoms. I have seen ten cases of this kind, and all of them have seemed to be much more benefited by attention to diet, air, and exercise, than by any medicines they have taken. Patients thus affected ought to live much in the open air ; their food should be sparing, mild, and nutritious ; and they ought to avoid carefully the use of wine and

ardent spirits. By these means alone, and the use of mild aperient medicines, two of the cases alluded to were quickly recovered, although they began in a very threatening manner. All the others but one were much relieved by the same means. I therefore consider these simple remedies to be of the greatest importance, and am convinced that without them no other remedies will have any effect. Next in importance to gentle exercise in the open air, and attention to diet, I should place the use of the warm bath. By means of it the severity of the spasms is very frequently relieved. The young lady, whose case is related at page 7, used it daily, sometimes several times in a day, and never without benefit. She could never enjoy any sleep at night unless she had previously spent a quarter of an hour in the bath; and to this day she continues the use of it. Joined to the above remedies, habitual attention must be paid to the bowels. They should be moved by the gentlest medicines, and they may often be advantageously acted on by glisters only. This manner of exhibiting medicine is fre-



quently objected to in England, because it only empties the lower parts of the larger intestines ; but repeated experience has convinced me, that the mere circumstance of evacuating the large intestines gives occasion to, and stimulates the action of, the higher passages. I do not intend to defend the habitual abuse of enemata which is daily witnessed on the Continent ; but, in this country, I think that their use may be extended with advantage. In whatever way, however, the bowels are evacuated, it is of the greatest consequence that they should be acted on by the gentlest medicines possible. Such, however, is their slowness in this disease, that it sometimes becomes necessary to use the strongest medicine in order to effect a mere evacuation ; but I have never seen the bowels violently moved without the highest injury to the patient. My common practice has been to prescribe small repeated doses of one of the neutral salts, to each of which I desire five or six drops of laudanum to be added. By this means it has seemed to me that my purpose was effected with least violence. I have tried all the medicines of

the class of antispasmodics, and cannot speak in favour of any one of them. They are either useless or hurtful. The tinctures and ethers are injurious in a very marked manner and in a very high degree. Various other remedies will, of course, be suggested to the judicious practitioner by the peculiar circumstances of each case.

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I MAY seem to some persons to have dwelt too tediously on the poisonous properties of iodine ; but let it be recollected, by those who have had opportunities of becoming acquainted with its virtues, that this medicine is as yet almost unknown to the numerous practitioners who are now daily using it ; that it is a medicine of singular power and efficacy in a great class of disorders, with which the inhabitants of this country are peculiarly afflicted ; that this most useful remedy may be divested of all its deleterious properties ; that, therefore, it will probably come into general use among us ; and they will allow that I have not bestowed too much time on this important subject. I wish the details

had been more complete, that my experience had been more extensive, and that I had been better able to satisfy the reader's curiosity and my own.

Some of my readers, who have lately been in the habit of using iodine cautiously, and of watching its effects, may think that I have overcharged the picture of its baneful properties; but I have been an eyewitness of all I have written; and I should extend this treatise much beyond the limits I have assigned to it, did I detail all the cases that have reached me of the mischief it has produced. I am glad, however, to add my testimony to that of Coindet, de Carro, and others, that this medicine may most certainly be deprived of all its hurtful qualities, by using it cautiously and watching its effect. Like all other powerful medicines, when its action is not controlled by the hand of a master, its energies become a source of mischief and ruin, instead of restoring the blessings of health and strength; but when well managed, it is a most useful remedy, and a valuable addition to our *materia medica*. I have used it myself in a great number of



cases, and I have never yet, in my own practice, had occasion to regret the occurrence of any of the violent symptoms I have described. I have more than once discontinued the medicine on finding the pulse become frequent, small, and depressed, on account of watchfulness, flying pains of the joints, tremors, or pain at the stomach; but having early detected these symptoms, they were not allowed to become formidable. Dr. Coindet states, that he has prescribed the medicine to one hundred and fifty patients, and that he has never had occasion to observe any mischief from its use.\* Dr. Decarro has given it at Vienna to one hundred and twenty patients; Dr. Erlinger, of Zurich, to seventy; and Dr. Formey has prescribed it extensively, in Prussia, with the same favourable results. Dr. Decarro, in his enthusiasm about this new medicine, seems almost to doubt whether any acci-

How\* Dr. Coindet, however, though he must be acquainted with the sad accidents which have occurred in his native city, has not yet taken any public notice of them. This silence on facts so important seems in some degree to invalidate his testimony.

dents have ever occurred from its use, though these accidents have been as public as the day, and the unhappy patients have paid with their lives the inexperience and rashness of their physicians. Thus far I can agree with Decarro, that I have never known or heard of any bad effect from iodine, when it had not been used unadvisedly and injudiciously. It has been used extensively by Hufeland in Germany, who makes no mention of its deleterious properties; and a great number of physicians in London and Paris, and various parts of England and France, have also lately employed it. They have either not met with the accidents I have described, or have prudently concealed them.

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HAVING now considered the effects of iodine on the alimentary canal and the nervous system, we are prepared for studying its effect on the absorbent vessels, by which its use in medicine is indicated. This is the most important subject which has yet fallen under my review, and I shall



give it as much extension as may be necessary for its perfect discussion. It has been already seen at pages 10 and 12 that the lymphatic system is very powerfully and generally stimulated, so as to occasion a great absorption of all the sebaceous, muscular, and glandular structures of the body; but it will be seen, in the following pages, that the action of iodine may be directed exclusively against tumors, and local disorders, while the healthy structures of the body remain unaffected.

The absorbent system is distributed over every part of the body. In the brain alone the vessels of this class have not, hitherto, been detected and submitted to ocular demonstration by any other anatomist than Mascagni. But physiological and pathological proofs of their existence, equal in force to any anatomical evidence, are not wanting to demonstrate their presence in the central organ of the nervous system. The office which these vessels discharge, in the nutrition of the body and removal of its waste, is most important to its healthy condition; and the influence it exerts, in a state of disease,

is not less considerable. From the inactivity or obstruction of the absorbent vessels, a great proportion of the chronic disorders of the body take their rise. Medicines, therefore, which act either directly or indirectly on this system, have always been accounted most valuable articles of the *materia medica*. Unhappily, they too often deceive us in their operation, and, notwithstanding the united studies of many physicians directed to them, the causes of their failure, as well as the circumstances under which they succeed, still remain a problem. A considerable step towards the solution of this difficulty has, indeed, been lately taken by Dr. Blackall. Much obscurity, however, yet rests upon the subject, and a direct medical agent on the absorbent system, whose effects are speedy, indubitable, and powerful, is a great desideratum in the art of healing.

Such an agent is iodine. Its effects on the absorbent system are incontrovertible. They are as speedy as they are certain, and so powerful are they, that if the medicine be not duly and cautiously managed, we

have already seen what havoc may be the result. A few, a very few, cases have occurred to myself, in which the constitution was altogether insensible to its action ; I believe a greater number have occurred to others ; but I cannot help thinking that such cases have been owing, in many instances, either to some fault in the medicine, or to some inadvertence on the part of the practitioner.\*

We shall first consider the use of iodine in the treatment of bronchocèle, the disease for the cure of which it was introduced into practice. All the physicians who have employed it bear unequivocal testimony to its efficacy. It seldom fails of effecting a complete cure, and when it does, it almost always reduces the swelling very considerably. The promptitude of its action is at times very extraordinary. Decarro states,

\* The iodine which is sold in the shops is of very different degrees of purity, which will probably afford an explanation of some of the above anomalies. But still, after all possible care has been taken, there will be found a few instances in which it does not appear to possess any power over the absorbent system.



that one of his patients, thirty-eight years of age, after taking the remedy for seventeen days, had the circumference of his neck reduced from one foot seven inches and a half, to one foot three inches and three-quarters. Dr. Coindet relates a case of a man, fifty years of age, in which this medicine, taken internally, reduced a very large goître considerably in size, after six days' treatment only. An old woman, aged sixty-five, who took this medicine under my care for a goître, with which she had been affected nearly forty years, had the circumference of her neck reduced from twenty-two inches to eighteen, on the twenty-fifth day. Such rapid diminution in the size of the tumor is not to be always expected. In some cases a whole month, and even more, elapses before any effect is visible. In general, however, the powers of the medicine are manifest at the end of the second week, and considerable progress towards cure has been made at the end of a month. I have endeavoured to find out whether there was any thing in the constitution of the different persons under my own observa-



tion, or in their state of health, which rendered them more or less apt to be affected by this medicine. I have not been very successful in this inquiry. But I found that in two cases of women afflicted with extensive and very painful varix of the veins of all the extremities, the effect of iodine was produced with great difficulty. This fact seemed to coincide with the result of Mr. Magendie's very interesting experiments on absorption, and I accordingly desired one of the persons, to whom I have just alluded, to lose a little blood from the arm. The effect of the medicine was very much accelerated by this treatment, but a consequence I did not look for was also the result of it, viz. the total and sudden disappearance of the varix, which had commenced during uterine gestation twelve years before. The goître succeeded the varix after her delivery. I merely mention the facts of this case, which may suggest useful hints to those who may meet with a case similarly circumstanced. Since its occurrence, whenever the medicine is slow in its operation,

provided the vessels be full and plethoric; I desire a little blood to be taken away from the arm, and I almost invariably find the action of the medicine much quickened. I have sometimes, also, thought that the cases, in which blood was taken away, were cured more easily and with less suffering than the others.

There is, very rarely, any considerable effect produced on the arterial system by iodine, if it be given with propriety and caution. Sometimes it accelerates the pulse in a slight degree; it frequently occasions a little mucous expectoration from the chest, and it often raises nervous symptoms in delicate subjects, which are very distressing. I saw it given to a young woman in one of the public hospitals in Paris, in whom it produced such a state of insomnia that she told me she had not slept at all for a whole week, though she had been a very good sleeper before. I have said that it affects the pulse but a little, yet it sometimes stimulates very powerfully the arterial vessels of the tumor. This is mentioned by

all the authors who have written on iodine, and is one of the most singular circumstances in its medical history.

This irritation of arterial vessels, frequently becomes active inflammation, requiring the use of bloodletting for its relief. Topical bleeding will, in general, be found fully competent to remove it. Indeed, it sometimes happens that when the iodine has lighted up smart inflammation in the tumor, the arterial system generally is unaffected. To what is this effect on the vessels of the part to be attributed, from which the constitution generally is free?

The same is occasionally true of the absorbent vessels. I have seen some very large tumors discussed, while there was no evidence whatever of the absorbent vessels in other parts of the body having felt the influence of the medicine. It is a curious question, to determine by what law the constitution remains impassive to the action of a medicine, which affects remote and distant parts through the constitution. Certain tumors are of so irritable a nature, that a stimulus, which only serves to rouse



the healthy energies of the body, excites the process of destruction in them. In the quaint language of a celebrated modern lecturer, "they are irritable beings, if you touch them they'll kick." But this is not the case with many of the tumors which are dissipated by iodine. Brônchocele, for instance, is of a slow growth; all the operations which go forward in its structure are of a very indolent and chronic kind. Such, also, is the case with the greater number of scrophulous tumors. Yet all of them have been dissipated, like a charm, by the agency of iodine.

In prescribing this medicine, it is very necessary not to lose sight of the effect I have just mentioned. When the tumor is very large, and especially in that kind of bronchocele, in which the principal enlargement of the thyroid gland takes place on its inner surface, where it is in contact with the trachea, the occurrence of inflammation is much to be apprehended. When a very large tumor becomes inflamed, the distress which it occasions, and the disturbance it excites in the constitution, are very consider-



able ; and in the second case to which I have alluded, inflammation of the trachea is very readily excited.\* Such cases are easily distinguished by the immoveability of the tumor, and the effect they have in altering the voice. On dissection, the trachea is sometimes found to have been very much compressed by them.

It is now fit that I should mention the most common and beneficial methods of using this substance. Dr. Coindet has recommended the hydriodate of potass as an external application, and my experience has certainly confirmed his choice. The hydriodate of soda, however, will be found to answer equally well. Practitioners may choose between these two remedies. I have used the iodates, but I have found them at once more inert and more unmanageable. They possess all the virtues of iodine in a very remarkable degree, but they will be found to fail more frequently than the hydriodatic salts ; and, if I may draw any

\* Dr. Coindet gives an instructive example of this kind. *Bibliothèque Universelle, Février, 1821, p. 148.*

conclusion from the few trials I have given them, they are more apt to excite disorder in the system. I have generally ordered half a dram of the hydrodate of potass to be united to an ounce and a half of axunge, and desired the patient to rub in a dram of this ointment over the surface of the tumor, night and morning. When the tumor is painful, it is not necessary to rub in. The ointment may be used in the manner recommended by Scattigna.\* All that is necessary is, to choose a portion of the surface of the body where the skin is very tender and thin, and simply to apply the ointment over night. For this purpose, almost any part of the body which is habitually covered may be chosen; but in the axilla, and in the inner surface of the thighs close to the scrotum, the absorption will be found most rapid.†

\*Nuovo metodo di amministrare l'unguento mercuriale The malisiftici del Dottore Vitantonio Scattigna. Napoli, 1818.

†I have seen, in the hospitals of Naples, the most decided and unquestionable effects produced by mercury used in this manner, I have since used it fre-

It is a more important question to determine the proper method of using this medicine internally. From my own experience, I am inclined to give a decided preference to the solution over the tincture. It is prepared by dissolving thirty grains of the hydriodate of *potass* in an ounce of distilled water. I have generally begun this preparation by a dose of ten drops, and

quently in my own practice in the same way; and I believe that the mercurial ointment, thus used, is exempt from much of the inconvenience occasioned by rubbing. I have seen several persons use it in this manner with ease, who could not rub in mercury without much suffering. Scattigna asserts that it is also much more efficacious than when rubbed in by the common method. His way of using it is, to extend a scruple of mercurial ointment over the skin of the axilla before the patient goes to sleep. In the morning, the whole of it will be found to be absorbed, and in this way he calculates that as strong an effect is produced as by a drachm of the ointment. I have used, in a case of hydrothorax, an ointment of squills in the same way, which has caused an increased flow of urine, which I had vainly endeavoured to effect by means of the same medicine given by the mouth. These statements are at variance with the experience of Mr. Pearson, which must be allowed to be of much weight in this matter. Will the difference of climate account for the discrepancy?



augmented it gradually to twenty, and, very seldom, to twenty-five. This preparation can dissolve an additional dose of iodine; a formulary, however, to which I seldom, if ever, have recourse. I have found that the deleterious action of the medicine on the bowels was more marked, in proportion to the quantity of free iodine it contained. For this reason, also, I now seldom have recourse to the tincture, a form much used, because it is less expensive. Practitioners will, in general, find an advantage in confining themselves to the external use of iodine for the cure of bronchocele, and tumors, which do not arise from any vice in the constitution. In a few cases of bronchocele, however, it is necessary to have recourse to its internal use, especially when the disease exists in a strumous habit. By the use, either of the ointment, or of the solution in the way we have recommended, a soft bronchocele will be discussed in a month or six weeks. Those which are hard, and of old growth, generally take a little longer time, and many of these latter cases cannot be altogether reduced. I have seen two cases, however,



in which the tumors gradually disappeared some weeks after the medicine had been altogether discontinued. Dr. Coindet says, that he has seen several cases of bronchocele, complicated with watery cysts, yield completely to the action of iodine. I have only had occasion to see one such case treated by this medicine. It was somewhat lessened in its bulk, and the patient was certainly relieved, but the disease was by no means cured.

If the iodine be given internally, it is indispensably necessary to watch its effects from day to day. No peculiarity of circumstances whatever can dispense the physician from this care; and if it be recollected that it is yet a new medicine, that unknown accidents, to which it is liable, may be discovered by future investigations, this caution will not appear superfluous. The case related by Dr. Coindet, to which we have already alluded at page 36, in which a very powerful and painful effect was produced at the end of the fifth day, sufficiently evinces the necessity of the watchfulness here recommended.

When iodine acts kindly on the constitution, no other effect will be found to accompany its use, but a diminution of the tumor and a little nervous excitement, which is sometimes not so severe as to become disagreeable. The increase of appetite is a very frequent effect of iodine, and it is sometimes very troublesome, because it is extremely necessary not to indulge it. The diet of the patient should be good, but by no means full, which the occasional voraciousness of his appetite would lead him to adopt.

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Having established that the use of iodine in bronchocele was owing to its effect on the absorbent system, it was natural to conclude that it would be of equal service in the cure of scrophula.\* Accordingly, we find that

\* On perusing most of our practical, and more especially our systematic authors, this term will be found of such latitude and various meaning, that, were they indiscriminately followed, scrophula might be considered an universal disease. In this place, we confine our attention to those diseases which are familiar to all practitioners, scrophulous tumors of the conglobate glands.

Dr. Coindet made trial of it in the cure of the latter disease, soon after he had determined its virtues in the former, and that his experiment was followed by the most satisfactory result. I have already considered at so great length the general effects of iodine on the constitution, that little remains for me in this place but to mention the particular cases in which I have found it useful, and those in which it has failed my expectations.

The first case of scrophula in which I made use of this medicine, was that of a young lady eighteen years of age, who had been affected by glandular swellings of the neck for nearly eight years. She used the solution of hydriodate of potass for a month; the dose varied from ten to twenty drops three times a day, with occasional intermission of a day when the absorption was going on rapidly. At the end of this time she had got perfectly rid of her swellings, and she now (two years since she took the medicine) remains perfectly well. When she discontinued her drops, so far from having been incommoded by them, her

health was certainly much improved. There remained several little fistulous sores, which required the assistance of the knife to heal them. The iodine is not equally efficacious in all cases of this kind. Great numbers, however, yield rapidly under its use; but many of them, also, resist its operation. I have never been able to assign even a plausible reason for this difference of its action in scrophula. In general, I have found such cases yield more readily to the internal than to the external use of iodine. The scrophulous glands of children are not so easily affected by iodine as those of persons who have attained the age of puberty, and they are also more liable to a relapse.

A female servant in one of the public hotels of Paris, aged thirty-three, married, who had born several children, shewed me a tumor of her right breast she had had about two years. It was not attended with any pain, but had lately somewhat increased, which gave her alarm. About a year before she had been advised by a surgeon to have it cut out. This advice gave her so much uneasiness, that she presented herself at the



clinical consultations of M. Dubois. That eminent surgeon immediately distinguished the tumor to be scrophulous; and during three months' treatment, all the usual remedies of this disease were exhausted without the least effect. A scruple of the ointment of the hydriodate of potass, placed in the axilla at night, completely removed the tumor in about six weeks. This is the only case of a similar kind in which I have used iodine. I have never yet employed it in scirrhus of the breast.\*

I was called in the month of February, 1822, to visit a boy five years old, affected in the following manner. Since the period of his birth, he had always been weakly, but,

\* My friend Mr. Maunoir, of Geneva, informed me that a little boy from one of the interior towns of Switzerland, was brought to him on account of a swelling of the knee-joint. He had already been under the care of several eminent surgeons, who had all declared the tumor to be a white swelling, and had recommended the amputation of the limb. Such, also, was the opinion of Mr. Maunoir; but finding the friends and the boy himself extremely averse to the operation, he tried the effect of iodine. In the course of a few weeks the tumor, pain, and stiffness of the joint were dissipated, and the boy was running about as formerly.

for the last two years, had gradually been falling off in his flesh and strength. He complained of frequent pains in his bowels, which were alternately confined and purged; the motions were discoloured and scybalous; he frequently vomited his food; his abdomen was much swelled; the rest of his body considerably emaciated; pulse natural; appetite variable, but never great. It was impossible to doubt, from the appearance of the child, that the mesenteric glands were enlarged, and I determined to make a very cautious trial of iodine. It was the first case in which I had used it for an internal disease, and I therefore watched it with unremitting care. I began by giving my little patient twelve drops in the day, which I gradually augmented to twenty, and I had the pleasure of seeing the abdomen gradually diminish in size, the bowels become more regular, the evacuations restored to their natural colour, the pain diminish and vanish, the appetite increase, and at the end of five weeks the child return to comparative health, without the occurrence of a single untoward symptom. The only medicine I employed during this treatment, besides iodine, was occasionally a few

grains of rhubarb. At the end of the five weeks the bowels acted without medicine. I am sorry to say that I lost sight of this child from this time. The parents were poor, were probably satisfied with the benefit they had received, and not willing to incur any farther expense for medicine. I have since prescribed this medicine in two other cases of disease of the mesenteric glands. The result was not so satisfactory as in the case I have just related, but both of them were considerably relieved, and had they been more attentive to the directions given them, I have little doubt that they also would have obtained a complete cure. But they were in the poorest class of society, were irregular in their habits, and paid very imperfect attention to the orders of their physician. In one of them, a young woman, fifteen years old, after she had taken fifteen drops of the solution of hydriodate of potass, twice a-day during three weeks, considerable tenderness of the whole abdomen came on, for which I judged it necessary to order the application of a dozen leeches. The relief was immediate. From the whole appear-

ance of the case, I judged this feverish attack to be an affection of the mesenteric glands, similar to what I have described at p. 39.

I have used this medicine in cases where I had good evidence of the presence of tubercles in the lungs, and I do not doubt that it will be found to be serviceable in the incipient stages of the disease. But I much question whether it will prove even innocent in the more advanced periods of tubercles, when extensive disorganization has taken place in the lungs. Some cases in which I have prescribed it, were benefitted in so marked a manner as to have inspired me with hopes of having at length found a remedy for that hitherto intractable and cruel malady. Other cases, on the contrary, seemed to be much aggravated by its use. If I may judge from the cautious expressions of Dr. Baron, in his work on tuberculous disease, this is nearly the result of his experience also. It is much to be desired that we had sufficient data for distinguishing the cases in which its use is beneficial, inert, and injurious. As yet, the results I have



obtained do not entitle me to come to any very definite conclusion on this subject. Mr. Haden, in his translation of Magendie's Pharmacopœia, has given the history of a case of affection of the chest, in which he seems evidently to think that tubercles were removed by the agency of iodine. I am glad to find this case stated by Mr. Haden with his characteristic candour and caution. It is much to be desired that a series of such cases were published. They would form the materials on which a just estimate of the powers of this medicine might be formed. I trust to be able, at no distant period, to give the result of my experience in this disease to the public, in such a manner as to establish what are the real virtues of iodine in the cure of pulmonary tubercles. At present, there is certainly sufficient ground for making a cautious trial of its powers; but, if I may trust to my own experience, it is impossible to use it with too much circumspection.

A young gentleman, aged twenty-six, who had passed four winters in the south of Europe for a cough, with pain in his chest,

and occasional expectoration of a thick matured discharge, frequently streaked with blood, consulted me on account of swelled glands in his neck, which he had had from his infancy, but which were at that time particularly troublesome. I desired him to use a solution of hydriodate of potass in the dose, of twelve drops three times a-day. In the course of two months, the swellings in the neck, which had pained him from his infancy, were quite dispersed, and at the same time his sufferings in the chest were so much diminished that he requested to be allowed to continue the medicine. I allowed him to use it a fortnight longer, at the end of which time he was quite free from complaint. He subsequently had another attack of his chest complaint, and wrote to me from Thoulouse to request directions for renewing the use of the medicine, under the care of a French physician. Before my letter reached him, he was carried off by an attack of some violent complaint, of which I never could learn the history. I have exhibited this medicine in several such cases, and frequently with the

most marked good effects. In fine, I have not the smallest doubt of its efficacy in relieving many diseases of the chest, in which all the general symptoms, as well as all the local means of exploring the condition of the lungs, which have lately been so much attended to in France, have given me the most satisfactory evidence of the presence of tubercles. I will not yet assert, however, that the use of iodine has been followed by the absorption of tubercles in the lungs. 'This important fact must not be affirmed hastily ; but I trust I shall be enabled, at a future period, to establish it to the satisfaction of every one, or to explain the beneficial action of the medicine on other grounds.

Dr. Baron, in his work already quoted (p. 221), has related a case of encysted dropsy of the ovarium, in which the use of iodine was attended with the most manifest and rapid benefit. I have seen it used in a case of the same kind, in which a swelling that had been twice tapped, and which then filled the greater part of the abdomen, was almost completely removed.

The patient, a woman of sixty-two, has recovered her strength; she has resumed the appearance of health, and has remained eighteen months free from dropsical symptoms.

I have made trial of iodine in two cases of ascites without benefit. I have also made use of it in a case of aménorrhœa, according to Coindet's advice, without the smallest advantage; nor have I been able to satisfy myself that it possesses any power over the uterine system



## CONCLUSION.

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THE liability of iodine to excite great disturbance in the constitution, has been made an objection to its use. I fear that this reproach must be shared by all powerful medicines whatever. If unattended to, or used with levity, any medicine which is capable of doing good, may also do harm. But if used with due discretion and properly watched, I have no hesitation in affirming, that iodine may be employed with as much safety as any of the powerful remedies which are daily in the hands of the least skilful members of the profession. But it has been also made a subject of reproach to this remedy that it is quite inert and useless. I shall not give any further reply to such a statement than what the foregoing pages contain. But I am credibly informed that it has been used by several eminent prac-

tioners of London ; who finding it quite inert, had laid it aside as useless\*.

I have already pointed out one source of such mistakes (page 3). I fear, however, that it has also been used by physicians who have not leisure of mind nor time enough for conducting such inquiries as they ought to be conducted. When we consider the silly pretences on which medicines are sometimes forced into fashionable practice, it will not appear wonderful that the investigation of their virtues should not be conducted with much zeal. But I know also that it has been hastily rejected, and without trial, by some persons grown old in the practice of physic, who have made their interests decidedly to consist in defending all that is old, and repudiating all that is new. Such persons expose themselves to ridicule when we see them reject a remedy so active

\* So great have been the ravages committed by the imprudent use of iodine in the Pays de Vaud, that the government of that canton has issued an injunction against its sale, excepting under the signature and responsibility of a physician.

as iodine, and continue to trust, for the cure of the severest diseases to which the human frame is liable, to medicines allowed on all hands, and even by themselves, to be absolutely useless.

The value of iodine as a remedy, however, does not depend on the testimony of any individual, however high his name. Its use is established by a long series of facts observed by physicians and surgeons of different countries. Wherever it has received a fair trial from unprejudiced persons, its effects have been so striking and undeniable as to force assent. It is not one of those remedies which is adopted by one man, and rejected by another, according to the accident or caprice of the moment; but one whose effects are written in such clear and intelligible characters, that *he that runs can read*. Its applications also are in cases of such common occurrence, that all practitioners have an opportunity of satisfying themselves of the real nature of the remedy, and the extent of its powers.

This medicine has also been called an empirical remedy. Of what importance is

it that it should bear this or any other name, by which the enemies of every thing that is new endeavour to keep others in the same state of happy ignorance which satisfies their own indolence, and answers the demands of the common routine of their practice? But in what respect is it an empirical remedy? Do we know any thing more of the action of a purgative? It is said to stimulate the larger or the smaller intestines, and iodine may be said to stimulate the absorbent vessels; and after we have said this, are we at all wiser than we were before? The only questions now before us, those which alone appear worthy of discussion, are, Do we in iodine possess a remedy for the diseases in which I have said it is useful? and if we do, on which of the living textures does it seem most particularly to exert its action? These questions settled, all the rest is of comparatively trivial importance.

The medicines which exert their action on particular textures or systems are extremely few indeed, and the few we possess are so uncertain in their operations, they are liable to such frequent failures, that sceptical



physicians doubt of their efficacy altogether, and even of the efficiency of medicine. There is something peculiarly gratifying to their vanity in supposing themselves freed from the common errors, and above the credulity of the vulgar. Iodine, however, is not liable to the sneers of such narrow minds. It is a real "heroic remedy" — a true present from the science of medicine to mankind.

## APPENDIX.

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I HAVE here thrown into an Appendix a brief account of the different preparations of which I have had occasion to make mention. It is chiefly extracted from Magendie's Formulary, which will be found to contain sufficient directions for the chemical and pharmaceutical operations undergone by iodine.

### *Tincture of Iodine.*

Take of Alcohol, of sp. gr. of .842, 1 oz.

Iodine, 39 gr.

Dissolve.

This preparation should not be long kept, as it readily undergoes alteration and decomposition. Alcohol varies in its solvent power of iodine according to its degree of concentration. The frequent opening of the vessels, therefore, in which it is kept, must occasion a change in the quality of the tincture, by allowing the evaporation of the spirit, and thus occasioning a diffu-

sion of undissolved iodine through this preparation. Mr. Magendie seems also to fear, that a decomposition of the alcohol may take place from the superior affinity of iodine for hydrogen. Altogether this is certainly the most objectionable form in which iodine is used.

*Solution of Hydriodate of Potass.*

Take of distilled Water, 1 oz.

Hydriodate of Potass, 30 gr.

Dissolve.

I have generally prescribed these two preparations in cinnamon or mint water, in which form they are seldom disagreeable to the stomach. I have avoided, as much as possible, joining them to any tinctures or infusions, as we are yet in a great degree unacquainted with the chemical habits of iodine and the different vegetable substances. It will be sometimes, however, found advisable to use tonics with iodine.

*Ointment of Hydriodate of Potass.*

Take of Hydriodate of Potass,  $\frac{1}{2}$  dr.

Axunge,  $1\frac{1}{2}$  oz. Mix.

## NOTE.

SINCE these pages were put to press, I have received from Professor Maunoir the following details of the case mentioned at page 49. As far as I know, it is the only case of the kind on record. I make no apology, therefore, for inserting it in this place.

“ C’est le 18 Mars 1821, que j’ai été consulté pour la première fois pour le jeune B—— de Soleure, enfant de huit ans, atteint, depuis moins d’un an, d’un *white swelling* au genou droit; pour lequel on avoit employé inutilement vésicatoires, sangsues, topiques résolutifs de toute espèce, remèdes internes, &c. Il avoit alors une augmentation considérable dans le volume du genou, que le médecin supposoit avoir lieu dans les os plutôt que dans les parties molles, et en même tems une diminution sensible dans le volume de la jambe. L’enfant ne pouvoit faire un pas sans douleur avec des béquilles; car il y avoit flexion de la jambe sur la cuisse, je ne sais pas à quel angle, mais impossibilité d’extension.

“ Je l’ai traité par correspondance sans le voir; on lui a fait des frictions avec l’onguent d’iode, gros comme une noisette, matin et soir. Il a pris la teinture d’iode à la dose d’ $\frac{1}{12}$  de grain au plus. Son estomac n’en a été nullement affecté, et huit mois après le père n’a pas pu résister au plaisir de me montrer son enfant. Il me l’a amené à Genève, et j’ai vu cet enfant, marchant et courant lestement, le genou droit de la même grosseur que le gauche, et aussi serviable que celui-là.

THE END.